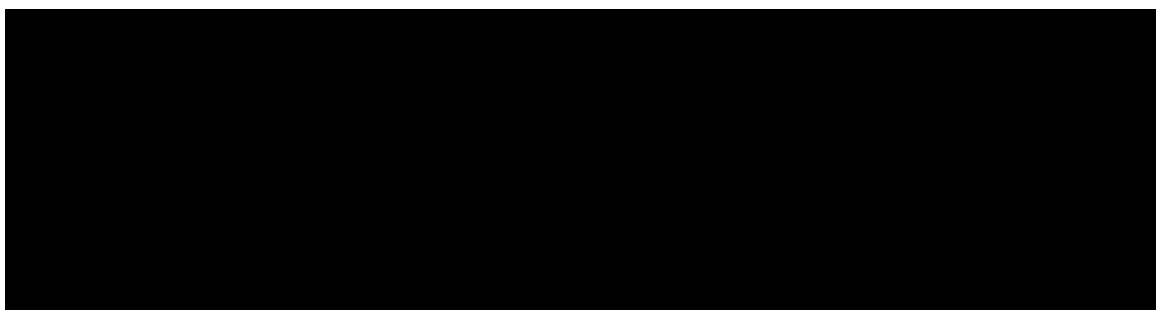


EXHIBIT 1

TO THE 9/27/19 STERN DECLARATION



Notice of Allowability	Application No. 14/413,290	Applicant(s) WANG ET AL.	
	Examiner Thaian N. Ton	Art Unit 1632	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 1/17/17.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.
2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
3. ☒ The allowed claim(s) is/are 1-5,13,62,67,83,88 and 93. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

- a) ☐ All b) ☐ Some *c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☒ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
3. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
4. ☒ Interview Summary (PTO-413),
Paper No./Mail Date _____.
5. ☒ Examiner's Amendment/Comment
6. ☒ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

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EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in an interview with Susie Cheng on 4/26/17.

The application has been amended as follows:

1. Replace claim 1 with the following:

1. A method for producing human embryonic stem cell-derived mesenchymal stem cells (hES-MSCs) comprising:
 - a) culturing human embryonic stem cells in a serum free medium comprising at least one GSK3 inhibitor at a concentration ranging from 0.05 μ M to 0.2 μ M, wherein the human embryonic stem cells are cultured in the absence of feeder cells;
 - b) culturing the cells resulting from step a) in a serum-free medium comprising vascular endothelial growth factor (VEGF) and bone morphogenic protein 4 (BMP4) in an amount sufficient to induce formation of embryoid bodies comprising human hemangio-colony forming cells;

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c) adding at least one growth factor to the culture resulting from step b), wherein the growth factor is in an amount sufficient to expand human hemangio-colony forming cells;

d) disaggregating the hemangio-colony forming cells resulting from step c) into single cells; and

e) culturing the single hemangio-colony forming cells resulting from step d) in mesenchymal stem cell medium containing serum, knockout serum replacement (KOSR) or in a serum-free medium to induce differentiation of the single cells into human mesenchymal stem cells;

wherein at least 90% of the hES-MSCs express CD73; and said hES-MSCs: (i) comprise greater than 95% of cells expressing CD73, CD90, CD105, CD146, CD166, and CD44; (ii) comprise greater than 80% of cells expressing CD13, CD29, CD54, and CD49E; (iii) comprise less than 5% of cells expressing CD45, CD34, CD31 and SSEA4; (iv) express IL-10 and TGF β ; (v) comprise less than 2% of cells expressing IL-6, IL-12 and TNF α ; and (vi) comprise less than 0.001% of cells co-expressing OCT4, NANOG, TRA-1-60 and SSEA4.

2. Replace claim 5 with the following:

5. The method of claim 1, wherein the hES-MSCs have lower expression of IFN γ R1 and IFN γ R2 when compared to IFN γ R1 and IFN γ R2 expression in bone marrow-derived mesenchymal stem cells.

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3. Cancel claims 6, 19, 23, 27, 43, 59-61.
4. In claim 13, line 2, insert the term – human – before the term “mesenchymal”.
5. In claim 62, line 1, insert the term – human – before the term “mesenchymal”.
6. In claim 67, line 1, insert the term – further – before the term “modified”.
7. Replace claim 88 with the following:
 88. The method of claim 83, wherein the hematopoietic stem cells comprise bone marrow hematopoietic stem cells, umbilical cord hematopoietic stem cells, or a combination thereof.

Reasons for Allowance

The following is an examiner’s statement of reasons for allowance:

The claims now require the presence of a GSK3 inhibitor at a specific concentration that results in the production of hES-MSCs with the specific characteristics recited by the claims. This limitation overcomes the rejections of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

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accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Information Disclosure Statement

Applicants IDS, filed 1/17/17 has been considered.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thaian N. Ton whose telephone number is (571)272-0736. The examiner can normally be reached on 8-5:30 M-Th PST (First week)/8-5:30 M-F PST (Second week).

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at <http://www.uspto.gov/interviewpractice>.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Paras can be reached on 571-272-4517. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Thaian N Ton/
Primary Examiner, Art Unit 1632